

**REMARKS:**

In response to the Final Office Action mailed January 3, 2005, Applicant respectfully request reconsideration of the application in light of the remarks herein. As an initial matter, Applicant notes that two claims have been inadvertently numbered as 'claim 25' in the previous response. Therefore, claims 18-20 and 23-31 should be currently pending. However, Applicant makes no amendments to the claims in this response, given it is assumed this error would be corrected should the application proceed to allowance.

Applicant submits herewith a Terminal Disclaimer to obviate the double patenting rejection over U.S. Patent No. 6,312,540. Accordingly, Applicant submits that the double patenting rejection has been overcome.

Claims 18-20 and 23-30 were rejected as being obvious over Thorn in view of Klasell et al. Thorn discloses a compression molded door assembly that includes door skins formed from sheet molding compound (SMC). In the present application, Applicant claims a hollow core door having first and second door skins, wherein at least one of the door skins is a molded wood composite door skin having a bond strength of at least about 2.0 N/mm<sup>2</sup>.

Thorn fails to fails to disclose or suggest such a molded door skin having the features claimed by Applicant. Sheet molding compound and other polymer materials have substantially different properties compared to wood composite materials. Specifically, when molding polymer materials, the material flows into the desired shape when heated and compressed. By contrast, molded wood composite articles are typically formed from a loose mat of wood fibers and resin material. The fiber-resin mat is

compressed and heated into the desired shape. However, the wood fibers in the mat do not 'flow' as with polymer materials. Rather, they are stretched. Such stretching may cause cracks and other surface defects. Such problems are not encountered when compressing polymer materials.

Molded wood composite door skins have a relatively large surface area to volume ratio. The wood fibers in the wood fiber-resin material forming such a door skin is therefore 'stretched' to a much greater extend compared to an object having a comparatively low surface area to volume ratio. One skilled in the art would not look to compression molding techniques which are applied to polymer materials, such as the sheet molding compound material disclosed by Thorn to achieve a molded wood composite door skin having particular structural features, such as a bond strength of at least about  $2.0 \text{ N/mm}^2$ .

Therefore, it would not be obvious to one skilled in the art to substitute the disclosed SMC door skin disclosed by Thorn for a wood composite door skin having a bond strength of at least about  $2.0 \text{ N/mm}^2$ , as claimed by Applicant. Furthermore, it is unclear how Thorn could be modified to provide a molded door having the features claimed by Applicant, given Thorn is not directed to the unique physical properties inherent to wood composite skins.

The Examiner asserts that it would have been obvious to substitute Thorn's door panels for the composite wood skins from Klasell et al. Applicant disagrees. Klasell et al. disclose a composite structure 10 having first and second spaced layers 25, 27 with a core 29 interposed between the layers. Layers 25, 27 may be composite board such as high-density fiberboard, hardboard or other wood composite products. (See '749 patent,

column 5, lines 24-29). However, Klasell also fails to disclose or suggest a wood composite door skin having a bond strength of at least about  $2.0 \text{ N/mm}^2$ . As such, neither reference relied upon for the rejection discloses or suggests a hollow core door having the features claimed by Applicant in independent claim 18.

Substituting the wood layers from Klasell et al. for the SMC door skins for Thorn would produce a conventional door having standard molded door skins. As noted in the specification of the present application, such standard molded door skins typically have a bond strength of about  $1.4 \text{ N/mm}^2$  or less. (See Specification, page 9, lines 11-13). The door skins according to the present invention have a substantially higher bond strength, and may have a bond strength of more than twice that of a standard flush or flat skin. (See Specification, page 9, lines 8-11). Thus, such a combination would produce the standard molded door skin noted by Applicant, which lacks the very features claimed by Applicant (i.e. a bond strength of at least about  $2.0 \text{ N/mm}^2$ ).

Therefore, even if Thorn and Klasell could be combined, their combined disclosure fails to suggest or disclose Applicant's invention as set forth in the claims. However, Applicant submits that such a combination is improper, given neither Thorn nor Klasell provide any teaching or incentive supporting their combination. *See ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 USPQ 929, 933 (Fed. Cir. 1984) (Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination).

Claims 19-20 and 23-30 all depend from claim 18. As such, Applicant submits that all dependent claims distinguish over the prior art of record for the reasons set forth

above. Furthermore, Applicant notes that one skilled in the art would not look to the disclosure of Thorn to provide a molded wood composite door skin having features such as a substantially constant density, contoured portions, angled offset portions, and differing thicknesses (see claims 25-28) given the different properties and molding considerations of wood composite materials compared to polymer materials such as SMC.

In light of the remarks herein, as well as the Terminal Disclaimer submitted herewith, Applicant respectfully requests reconsideration of the application. Allowance of all pending claims is earnestly solicited. It is believed that no fee is due with this submission. Should that determination be incorrect, then please debit Account No. 50-0548 and notify the undersigned.

Respectfully submitted,



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